

### **REMARKS**

Claims 1, 3-5, 7-20, and 42-45 have been rejected. All the previous independent claims 1, 11, and 42 have been amended. New Independent claim 46 has been added. Claims 1, 3-5, 7-20, and 42-46, therefore, are presently pending in the application. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

#### **Rejection of Claims 1, 3-5, 7-20, and 42-45 under 35 U.S.C. 102(b):**

Claims 1, 3-5, 7-20, and 42-45 have been rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sato et al (Sato).

The Examiner states that Sato discloses a heat developable photosensitive material containing a compound that encompasses the scope of that of the present claimed invention. The Examiner notes compound (Z) in column 2 and the exemplified compounds in columns 5-8 which contain an aromatic compound substituted with electron withdrawing groups such as a halogen group or CN group. The Examiner states that the compound of the presently claimed invention encompasses the scope of the compound of Sato when T<sub>(1)</sub> and R<sub>12</sub> forms an aromatic groups. The Examiner states, therefore, that the invention as claimed lacks novelty, and alternatively, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to form a developer within the scope taught by Sato with an expectation of achieving a material which has excellent preservability before use and which provides a color image having high image density and a low fog density.

This rejection is respectfully traversed, in view of the above amendments to the claims, including all the independent claims now pending. In particular, the claims have been amended to more particularly and clearly define the invention such that, in the claimed structure, when R<sub>12</sub> and T combine to form a ring, the two carbon atoms to which T and R<sub>12</sub> are, respectively, attached remain linked by a single bond. This is consistent with the original disclosure in which all the compounds meet this limitation, which is necessary in order for the blocked compound to decompose by a 1,2 elimination mechanism to release a photographically useful group on thermal activation, as supported by the original specification at page 4, lines 1-2. In other words, the single bond between the two carbon atoms, shown in Structure I between the optional Link 2 and the X group,

remain as shown in Structure I in the claims, i.e., the single bond does not change to an aromatic bond as a result of any substitution or linking of groups. This particular single bond is a key characteristic of the blocked compounds of the claimed invention and is important to the unblocking mechanism and the associated or consequent properties of the blocked compounds of the present invention. In contrast, the compounds of Sato '623 do not have the same two carbon atoms connected by a single bond, but rather the two carbon atoms are part of an aromatic structure, which clearly is very differently from the compounds of the present invention and involve a very different unblocking mechanism.

In addition, the compounds of claims 13 and 43-45 are not disclosed in Sato '623 irrespective of the above amendments to the claims. Claim 13 lists various specific compounds of Structure I, all of which compounds have the single bond mentioned above. Claims 43-45, like new independent claim 46, are directed to blocked compounds in which there are two photographically useful compounds such that one of the photographically useful compounds is part of the blocking group for the other photographically useful compound, in other words compounds of Structure I in which "a" is 2. A few examples of such a compound are D-28, D-29, and D-30 on page 25 of the specification.

It is believed that the foregoing is a complete response to the Office Action and that the claims are in condition for allowance. Favorable reconsideration and early passage to issue is therefore earnestly solicited.

Attached hereto is a marked up version of the changes made to the claims by the current amendment. The attached page(s) is captioned "Version With Markings To Show Changes Made."

Respectfully submitted,



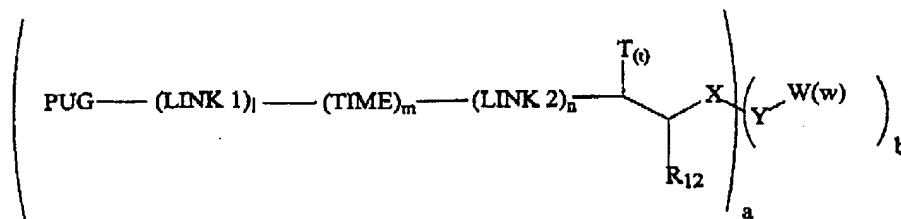
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Version With Markings To Show Changes MadeIn the Claims:

Claims 1, 11, and 42 have been amended as set forth below:

-- 1. (Fourthly Amended) A photographic or photothermographic imaging element comprising an imaging layer having associated therewith a compound of Structure I:



I

wherein:

PUG is a photographically useful group;

LINK 1 and LINK 2 are linking groups;

TIME is a timing group;

l is 0 or 1;

m is 0, 1, or 2;

n is 0 or 1;

Y is C, N, O or S;

X is a substituted or unsubstituted aryl group or an electron-withdrawing group;

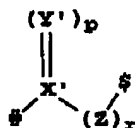
W is hydrogen, halogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group, or W can combine with T or R<sub>12</sub> to form a ring, w is 0 to 3 when Y is C, w is 0-2 when Y is N, and w is 0-1 when Y is O or S, when w is 2, the two W groups can combine to form a ring, and when w is 3, two W groups can combine to form a ring or three W groups can combine to form a bicyclic substituent;

$R_{12}$  is hydrogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group or  $R_{12}$  can combine with T to form a ring, in which ring the two carbon atoms to which T and  $R_{12}$  are, respectively, attached are linked by a single bond;

T is a substituted or unsubstituted alkyl, cycloalkyl, aryl or six-membered heterocyclic group, t is 0, 1, or 2, with the proviso that when X is a cyano or sulfonyl group t is 1 or 2, when t is 2 the two T groups can combine to form a ring;

X is divalent, a is 1 or 2, and b is 1;

where LINK 1 and LINK 2 is independently of Structure II:



II

wherein

$X'$  represents carbon or sulfur;

$Y'$  represents oxygen, sulfur or  $N-R_1$ , where  $R_1$  is substituted or unsubstituted alkyl or substituted or unsubstituted aryl;

p is 1 or 2;

Z represents carbon, oxygen or sulfur;

r is 0 or 1;

with the proviso that when X is carbon, both p and r are 1, when X is sulfur, Y is oxygen, p is 2 and r is 0;

# denotes the bond to PUG (for LINK 1) or TIME (for LINK 2);

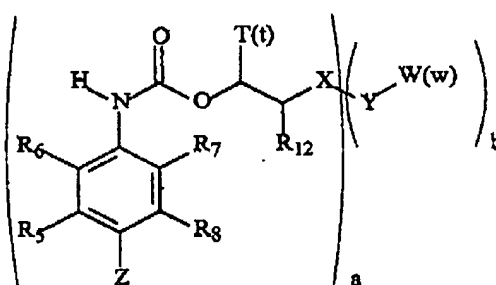
\$ denotes the bond to TIME (for LINK 1) or  $T_n$  substituted carbon (for LINK 2);

and

wherein PUG is a development inhibitor, bleach accelerator, bleach inhibitor, inhibitor releasing developer, dye precursor, developing agent, silver ion

fixing agent, electron transfer agent, silver halide solvent, silver halide complexing agent, reductone, image toner, pre-processing or post-processing image stabilizer, nucleator, or precursor thereof.

11. (Fourthly Amended) A photographic, photothermographic, or thermographic imaging element comprising an imaging layer having associated therewith a compound of Structure III:



III

wherein:

Z is OH or NR<sub>2</sub>R<sub>3</sub>, where R<sub>2</sub> and R<sub>3</sub> are independently hydrogen or a substituted or unsubstituted alkyl group or R<sub>2</sub> and R<sub>3</sub> are connected to form a ring;

R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, and R<sub>8</sub> are independently hydrogen, halogen, hydroxy, amino, alkoxy, carbonamido, sulfonamido, alkylsulfonamido or alkyl, or R<sub>5</sub> can connect with R<sub>3</sub> or R<sub>6</sub> and/or R<sub>8</sub> can connect to R<sub>2</sub> or R<sub>7</sub> to form a ring;

T is a substituted or unsubstituted alkyl cycloalkyl, aryl or six-membered heterocyclic group, t is 0, 1, or 2, with the proviso that when X is a cyano or sulfonyl group, t is 1 or 2, when t is 2, the two T groups can combine to form a ring;

R<sub>12</sub> is hydrogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group or R<sub>12</sub> can combine with T or W to form a ring, in which ring the two carbon atoms to which T and R<sub>12</sub> are, respectively, attached are linked by a single bond;

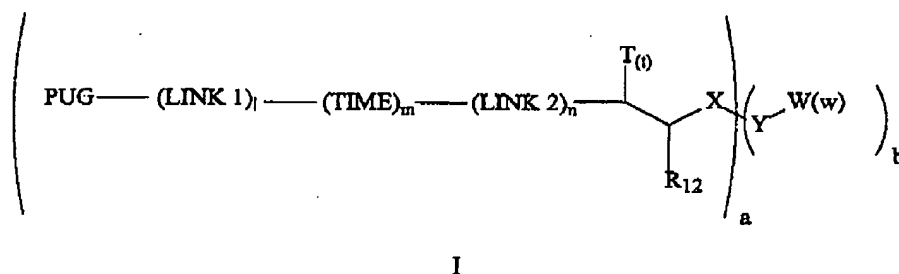
X is a substituted or unsubstituted aryl group or an electron-withdrawing group;

Y is C, N, O or S;

X is divalent, a is 1 or 2, and b is 1;

W is hydrogen, halogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group, or W can combine with T to form a ring, w is 0 to 3 when Y is C, w is 0-2 when Y is N, and w is 0-1 when Y is O or S, when w is 2, the two W groups can combine to form a ring, and when w is 3, two W groups can combine to form a ring or three W groups can combine to form [an aryl group or] a bicyclic substituent.

42. (Twice Amended) A photographic, photothermographic, or thermographic imaging element comprising an imaging layer having associated therewith a compound of Structure I:



wherein:

PUG is a developing agent;

LINK 1 and LINK 2 are linking groups;

TIME is a timing group;

l is 0 or 1;

m is 0, 1, or 2;

n is 0 or 1;

Y is C, N, O or S;

X is a substituted or unsubstituted aryl group or an electron-withdrawing group;

W is hydrogen, halogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group, or W can combine with T or R<sub>12</sub> to form a ring, w is 0 to 3 when Y is C, w is 0-2 when Y is N, and w is 0-1 when Y is O or S, when w is 2, the two W groups can combine to form a ring, and when w is 3, two W groups

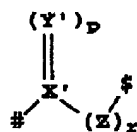
can combine to form a ring or three W groups can combine to form [an aryl group or] a bicyclic substituent;

R<sub>12</sub> is hydrogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group or R<sub>12</sub> can combine with T to form a ring, in which ring the two carbon atoms to which T and R<sub>12</sub> are, respectively, attached are linked by a single bond;

T is a substituted or unsubstituted alkyl cycloalkyl, aryl or six-membered heterocyclic group, t is 0, 1, or 2, with the proviso that when X is a cyano or sulfonyl group t is 1 or 2, when t is 2 the two T groups can combine to form a ring;

X is divalent, a is 1 or 2, and b is 1;

where LINK 1 and LINK 2 is independently of Structure II:



II

wherein

X represents carbon or sulfur;

Y represents oxygen, sulfur or N-R<sub>1</sub>, where R<sub>1</sub> is substituted or unsubstituted alkyl or substituted or unsubstituted aryl;

p is 1 or 2;

Z represents carbon, oxygen or sulfur;

r is 0 or 1;

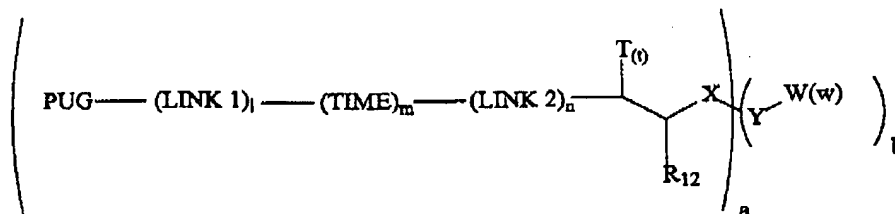
with the proviso that when X is carbon, both p and r are 1, when X is sulfur, Y is oxygen, p is 2 and r is 0;

# denotes the bond to PUG (for LINK 1) or TIME (for LINK 2):

\$ denotes the bond to TIME (for LINK 1) or T<sub>(t)</sub> substituted carbon (for LINK 2). --

A new claim 46 has been added as set forth below:

-- 46. A photographic, photothermographic, or thermographic imaging element comprising an imaging layer having associated therewith a compound of Structure I:



wherein:

PUG is a developing agent;

LINK 1 and LINK 2 are linking groups;

TIME is a timing group;

l is 0 or 1;

m is 0, 1, or 2;

n is 0 or 1;

Y is C, N, O or S;

X is a substituted or unsubstituted aryl group or an electron-withdrawing group;

W is hydrogen, halogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group, or W can combine with T or R<sub>12</sub> to form a ring, w is 0 to 3 when Y is C, w is 0-2 when Y is N, and w is 0-1 when Y is O or S, when w is 2, the two W groups can combine to form a ring, and when w is 3, two W groups can combine to form a ring or three W groups can combine to form [an aryl group or] a bicyclic substituent;

R<sub>12</sub> is hydrogen, or a substituted or unsubstituted alkyl, cycloalkyl, aryl or heterocyclic group or R<sub>12</sub> can combine with T to form a ring, in which ring the

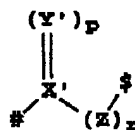


two carbon atoms to which T and R<sub>12</sub> are, respectively, attached are linked by a single bond;

T is a substituted or unsubstituted alkyl cycloalkyl, aryl or six-membered heterocyclic group, t is 0, 1, or 2, with the proviso that when X is a cyano or sulfonyl group t is 1 or 2, when t is 2 the two T groups can combine to form a ring;

X is divalent, a is 2, and b is 1;

where LINK 1 and LINK 2 is independently of Structure II:



II

wherein

X represents carbon or sulfur;

Y represents oxygen, sulfur or N-R<sub>1</sub>, where R<sub>1</sub> is substituted or unsubstituted alkyl or substituted or unsubstituted aryl;

p is 1 or 2;

Z represents carbon, oxygen or sulfur;

r is 0 or 1;

with the proviso that when X is carbon, both p and r are 1, when X is sulfur, Y is oxygen, p is 2 and r is 0;

# denotes the bond to PUG (for LINK 1) or TIME (for LINK 2);

\$ denotes the bond to TIME (for LINK 1) or T<sub>(t)</sub> substituted carbon (for LINK 2). --